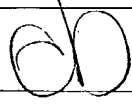


Notice of Allowability	Application No.	Applicant(s)	
	09/945,125	FRATER, MARK S. 	
	Examiner	Art Unit	
	Michael J Feely	1712	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to amendment filed 1/21/04.
2. ☒ The allowed claim(s) is/are 9,10,15 and 41-50.
3. ☐ The drawings filed on _____ are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☒ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☒ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date 6/16/03.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|---|--|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input checked="" type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date <u>0204</u> . |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date _____ | 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other _____. |

EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with John P. O'Banion (Reg. No. 33,201) on February 3, 2004.

The application has been amended as follows:

In the claims:

9. (Amended) A sheet laminate material for drilling a printed circuit board, comprising:
- a first metal sheet;
 - a second metal sheet; and
 - a fibrous core;
- said fibrous core coupled to said first metal sheet with a first adhesive layer;
- said fibrous core coupled to said second metal sheet with a second adhesive layer;
- wherein said adhesive layers contain a particulate lubricant, said lubricant comprising polyethylene glycol having a molecular weight ranging from approximately 600 to approximately 4,000.
10. (Amended) A sheet laminate material as recited in claim 9, wherein said adhesive layers comprise epoxy resin.

Art Unit: 1712

15. (Amended) A sheet laminate material as recited in claim 9, wherein said adhesive layers contain approximately 0.1 percent to approximately 10 percent by weight of polyethylene glycol particulates.

41. (Amended) A sheet laminate material for drilling a printed circuit board, comprising:

a first substrate layer;

a second substrate layer; and

a fibrous core;

said fibrous core coupled to said first substrate with a first adhesive layer;

said fibrous core coupled to said second substrate with a second adhesive layer;

wherein said adhesive layers contain a particulate lubricant, said lubricant comprising polyethylene glycol having a molecular weight ranging from approximately 600 to approximately 4,000.

42. (Amended) A sheet laminate material as recited in claim 41, wherein said adhesive layers contain approximately 0.1 percent to approximately 10 percent by weight of polyethylene glycol particulates.

43. (Amended) A sheet laminate material as recited in claim 42, wherein said adhesive layers contain approximately 1 percent by weight of polyethylene glycol particulates.

Art Unit: 1712

46. (Amended) A sheet laminate material as recited in claim 41, wherein said fibrous core has a thickness of between approximately 0.002 inches to approximately 0.01 inches; wherein said adhesive layers are permeated through said fibrous core.

47. (Amended) A sheet laminate material as recited in claim 41, wherein said adhesive layers comprise epoxy resin.

48. (Amended) A sheet laminate material as recited in claim 9, wherein said metal sheets have a thickness of between approximately 0.001 inches and approximately 0.003 inches.

49. (Amended) A sheet laminate material as recited in claim 9, wherein said fibrous core has a thickness of between approximately 0.002 inches to approximately 0.01 inches; wherein said adhesive layers are permeated through said fibrous core.

50. (Amended) A sheet laminate as recited in claim 9, wherein said sheet laminate material is compressed to a thickness of between approximately 0.007 to approximately 0.016 inches.

Allowable Subject Matter

2. Claims 9, 10, 15, and 41-50 are allowed.
3. The following is an examiner's statement of reasons for allowance:

Art Unit: 1712

Independent claim 9 and dependent claims 10, 15, and 48-50:

Claim 9 has been rewritten to include the limitations of previous claim 16. Claim 16 was previously indicated as allowable subject matter; hence, claim 9 is allowable for the reasons set forth in section 13. Claims 10, 15, and 48-50 are allowed because they are dependent from claim 9.

Independent claim 41 and dependent claims 42-47:

Claim 41 is similar to claim 9, except the laminate material features generic substrate layers instead of metal sheets. As with claim 9, the closest prior art is Miller et al. (US Pat. No. 6,200,074). The laminate of Miller et al. includes a "lubricant/adhesive" that consists of a water dispersion of polyethylene oxide resin plasticized with a *high molecular weight* polyethylene glycol. The recitation of a "high molecular weight" appears to teach away from the claimed molecular weight range. Furthermore, polyethylene glycol is used to plasticize polyethylene oxide; hence, polyethylene glycol, as is, is not present in the "lubricant/adhesive" of Miller et al.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Communication


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael J Feely whose telephone number is 571-272-1086. The examiner can normally be reached on M-F 8:30 to 5:00.

Art Unit: 1712

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on 571-272-1119. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Michael J. Feely
Patent Examiner
Art Unit 1712


PHILIP TUCKER
PRIMARY EXAMINER
ART UNIT 1712

January 30, 2004